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Appl. No.	:	10/085,913 Confirmation No. 3329
Applicant (s)	:	James J. Jakubowski, Wayne R. Willkomm, James E. Pate
Filed	:	February 27, 2002
TC/A.U.	:	1714
Examiner	:	Patrick Niland
Title	:	CONTINUOUS PROCESS FOR PREPARING A POLYURETHANE LATEX
Docket No.	:	43231C
Customer No.	:	00109

CERTIFICATION OF FACSIMILE TRANSMISSION

I HEREBY CERTIFY THAT THIS PAPER IS BEING FACSIMILE TRANSMITTED TO THE U.S. PATENT AND TRADEMARK OFFICE ON THE DATE SHOWN BELOW:

March 16, 2004

DATE OF DEPOSIT

Carol A. Axtell

PRINT OR TYPE NAME OF PERSON SIGNING CERTIFICATE

Carol A. Axtell

SIGNATURE OF PERSON SIGNING CERTIFICATE

3/16/04

DATE OF SIGNATURE

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

DECLARATION UNDER CFR 1.131

I, James J. Jakubowski, declare and state that I am a co-inventor for the above-identified patent application.

As evidenced by the following exhibits, I conceived and reduced to practice in the United States the invention claimed in the above-identified patent application prior to December 18, 1996, the filing date of the cited United States Patent 5,859,111.

Prior to December 18, 1996, I carried out the following experiment: I calibrated the flow rate of a polyurethane/urea prepolymer, which was prepared by

reacting 70% by weight VORANOL 2120 polyol with 30% by weight ISONATE 50 MDI, to feed continuously through a conduit at a rate of 30.9 g/min.

I precalibrated the flow rate of 25% by weight DS-10 sodium dodecylbenzene sulfonate surfactant in a 90:10 weight:weight percent mixture of water and ethanol to flow through a second conduit at a rate of 2.6 g/min. I also precalibrated an initial aqueous stream (IA stream) to flow through a third conduit initially at a rate of 8 g/min, then adjusted the flow rate of the IA stream to 4 g/min to minimize particle size.

These three streams were merged and passed through a centrifugal pump to form a high internal phase ratio emulsion (HIPE) stream. The HIPE stream was merged with a water stream precalibrated to flow at a rate of 10 g/min and a 10% piperazine in water stream precalibrated to flow at a rate of 18 g/min and the combined streams were passed through a second centrifugal pump to form a polyurethane/urea latex.

I recorded this data in a table, which is attached as Exhibit I. By way of explanation, dispersity refers to the polydispersity of latex, Surf rate refers to the flow rate of the surfactant stream, Poly rate refers to the flow rate of the prepolymer stream, I.A. rate refers to the flow rate initial aqueous stream, Feed ratio refers to ratio of solids to water, Dil. rate #1 refers to the flow rate of the water stream, and Dil. rate # 2 refers to the flow rate of the 10% aqueous piperazine.

The percent solids of the polyurethane latex was calculated to be 52.4 percent. I isolated a sample of the latex at 1 hour and 12 minutes and analyzed it using a Coulter LS Particle Size Analyzer, the histogram of which analysis appears as Exhibit II. The Analyzer calculated the mean volume average particle size of the latex to be 0.624 microns.

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that I made these statements with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both,

under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: 3/15/2004

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RSW/caa

EXHIBIT I

#1125-9601388-40

See Notebook 1125-9600338 pp 69, 70, 71 for Benchtop screen

Polymer # 1125-9600338-11, 70% Voranol 2120/30% Isonate 50
Solvent none
Additive 25% DS-10 in 90/10 water/ethanol

	Date run
30	N2 pressure in polymer feed tank, psi
30.9	Calibration of polymer feed pump, g/minute
8116	Polymer Feed Loaded, g
I. A. feed:	water
Dil feed:	water

Notes:
Bath temperature controlled at 10 C

Surfactant feed set at 2.1% of polymer
* 10% piperizine in warter added to pump #3
** run stopped as product starting to coaggulate in pump being added

ID No	Time Start	Time of Sample	Particle Size (µm)	Dispersity	Surf Rate	Poly. Rate	I.A. Rate	Feed Ratio	Dil. Rate #1	Dil. Rate #2	Press. #1 (psi)	Press. #2 (psi)	Freq. Cent.1 (Hz)	Freq. Cent.2 (%)	Freq. Cent.3 (Hz)
	0:26				2.6	30.9	8	3.1	10	0	15	10	20	40	20
	0:36				2.6	30.9	7	3.5	10	0	28	10			
	0:40				2.6	30.9	6	3.9	10	0	33	11			
	0:42	0:42	2.603	2.94	2.6	30.9	5	4.4	10	0	35	15			
	0:51	0:50	0.859	1.36	2.6	30.9	4	5.2	10	0	42	19			
	0:59	0:59	0.701	1.1	2.6	30.9	4	5.2	10	0	55	30			
	1:08	1:12	0.642	1.13	2.6	30.9	4	5.2	10	18	57	29			
	1:22	1:38	0.633	1.1	2.6	30.9	4	5.2	10	18	60	31			
	1:57	1:57	0.695	1.13	2.6	30.9	4	5.2	10	18	56	29			
	2:38	*			2.6	30.9	4	5.2	10	18	56	30			
	stop	2:51	0.71	1.1	2.6	30.9	4	5.2	10	18	**				

Jane Jakubowich

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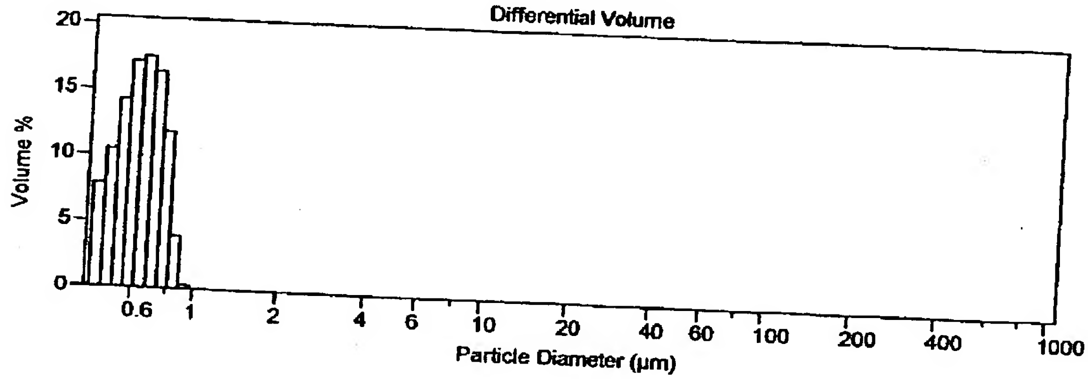
EXHIBIT II

COULTER

LS Particle Size Analyzer

13:56

File name: JJ103196.$05
Sample ID: 1:12 Group ID: JJ103196
Operator: JAKUBOWSKI Run number: 5
Comments: 70% V-2120/30% I-50, 2% DS-10, 10 C RUN
Optical model: polysty.omd
LS 130 Micro-volume Module



Volume Statistics (Arithmetic) jj103196.$05

Calculations from 0.429 µm to 900 µm

Volume	100.0%		
Mean:	0.624 µm	95% Conf. Limits:	0.412-0.837 µm
Median:	0.618 µm	S.D.:	0.108 µm
Mean/Median Ratio:	1.009	Variance:	0.0118 µm^2
Mode:	0.647 µm	C.V.:	17.4%
		Skewness:	0.23 Right skewed
		Kurtosis:	-0.738 Platykurtic

% >	10	25	50	75	90
Size µm	0.778	0.706	0.618	0.538	0.479

Number Statistics (Arithmetic) jj103196.$05

Calculations from 0.429 µm to 900 µm

Number	100.0%		
Mean:	0.570 µm	95% Conf. Limits:	0.376-0.764 µm
Median:	0.553 µm	S.D.:	0.0989 µm
Mean/Median Ratio:	1.030	Variance:	0.00977 µm^2
Mode:	0.539 µm	C.V.:	17.3%
		Skewness:	0.699 Right skewed
		Kurtosis:	-0.197 Platykurtic

% >	10	25	50	75	90
Size µm	0.717	0.636	0.553	0.489	0.452

Author: James Jakubowski
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